

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

EU Services

University of Maryland Manufacturing Assistance Program

EU Services Identifies Projects to Lower Environmental Impact

Client Profile:

EU Services, founded in 1968, is a mailing and lithographic printing company specializing in direct marketing solutions. Located in Rockville, Maryland, EU Services offers start-to-finish capabilities for producing and distributing printed materials. The company employs 400 people.

Situation:

EU Services developed an Environmental Management System (EMS) as part of the Maryland Department of the Environment (MDE) and the University of Maryland Manufacturing Assistance Program's (UMMAP), a NIST MEP network affiliate formerly known as the Maryland Technology Extension Service, ISO 14001 EMS program. Through their EMS, EU identified several projects which had the potential to reduce their environmental impact. However, the day-to-day demands of operating a manufacturing facility make it difficult for staff to devote time to exploring and implementing these process and equipment changes. Recognizing this, MDE UMMAP partnered to place engineering students as pollution prevention (P2) interns at nine Maryland manufacturers to research and implement cost-saving, waste reduction opportunities.

Solution:

Paul Gietka, manager of UMMAP's environmental program, met with EU Services, and then recruited Sean Vorsteg, an undergraduate student in the Department of Civil & Environmental Engineering at the University of Maryland, to examine alternative methods to reduce the environmental impact and energy consumption in five areas identified by EU services as their top areas of concern. The five areas selected were fountain solution recycling, blanket wash distillation, energy efficient lighting, high-volume low-speed (HVLS) fans, and cool roofing. Sean evaluated these pollution prevention opportunities to determine their economic feasibility and potential savings.

In order to maintain product quality, EU Services changes their fountain solution on a weekly basis. Vorsteg investigated methods to extend the useful life of the fountain solution through filtration and recycling. Filtration units, coupled with the consolidation of the fountain solution dampener recirculation units, will allow EU to reduce their fountain solution purchases by 95 percent, would reduce water use by 95 percent, lower energy consumption by 55 percent, and reduce labor costs by \$12,000 per year.

Another area of focus for EU Services was blanket wash, a solution used in the lithographic printing industry to clean rollers. Vorsteg researched distillation units for on-site recycling of the blanket wash. The distillation unit will allow EU to reduce their blanket wash consumption by 90 percent and would reduce water use by 70 percent.

Vorsteg also investigated the replacement of the existing metal halide lamps in the warehouse with energy efficient fluorescent lamps to lower EU Services energy consumption. The conversion to fluorescents will provide improved light quality and over 50 percent savings in energy. Fluorescents also allow for the installation of daylight and motion sensors which will further reduce the energy used

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to light the warehouse.

EU Services identified their mail house as another area of concern due to excessive heating costs and inadequate air conditioning. Vorsteg researched an emerging technology referred to as high-volume low-speed (HVLS) fans. HVLS fans resemble large industrial fans, but can be as large as 24 feet in diameter. These huge fans are designed to evenly distribute large volumes of air throughout an enclosed space. During the winter months, effective air movement leads to a destratification of the warmer air and provides savings of 20 to 30 percent, while summer cooling cost savings would be as much as 20 percent. EU decided to purchase two HVLS fans to provide cooling air movement during the summer and destratification during the winter months. EU Services has already installed a HVLS fan and is currently in the process of installing a cool roof on their press room facility. Employee support for the project is high, and maintenance workers are impressed with the 5 to 10 degree F. surface temperature difference experienced during installation. EU Services plans to install cool roofs on all of their facilities based on the success of the installation.

Finally, Vorsteg researched the benefits of using cool roofing materials in an upcoming re-roofing project. Cool roofing materials are similar in price to conventional roofing materials, but feature some cost saving benefits. The cool roof reflects solar radiation and reduces heat transfer to the interior of the building, reducing temperature fluctuations and increasing comfort levels. By mitigating temperature fluctuations, cooling energy costs can be reduced by 7 to 15 percent. In addition, the reduction in temperature fluctuations coupled with the lower quantities of absorbed solar energy can extend the life span of a roof, lower maintenance costs, avoid future re-roofing costs, and reduce solid waste.

Results:

Anticipated savings of \$8,700 annually.

Projected investment of \$142,800.

Testimonial:

"Working with UMMAP was a great experience for all of us to see what we can do. It is important to our customers and to us to leave the world a better place than the way we found it."

Ford James, Safety and Security Manager